

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 December 2000 (07.12.2000)

PCT

(10) International Publication Number
WO 00/72875 A1

(51) International Patent Classification⁷: **A61K 38/41**,
38/42, 38/17, 38/10, 39/40, A61P 31/04, 15/02

(74) Agents: **HUGHES, E., John, L. et al.**; Davies Collison
Cave, Level 3, 303 Coronation Drive, Milton, QLD 4064
(AU).

(21) International Application Number: **PCT/AU00/00599**

(22) International Filing Date: **26 May 2000 (26.05.2000)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
PQ 0652 **28 May 1999 (28.05.1999)** **AU**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,
DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO,
NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **UNIVER-**
SITY OF SYDNEY [AU/AU]; Sydney, NSW 2000 (AU).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **COLLYER,**
Charles, Andrew [GB/AU]; 195 St John's Road, Glebe,
NSW 2037 (AU). HUNTER, Neil [AU/AU]; 6 Clement
Close, Pennant Hills, NSW 2120 (AU). DE CARLO,
Arthur, Anthony, Jr. [US/US]; 3020 Woodhaven Circle,
Birmingham, AL 35243 (US).

Published:

— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **A METHOD OF PROPHYLAXIS AND TREATMENT AND AGENTS USEFUL FOR SAME**

WO 00/72875 A1

(57) Abstract: The present invention relates generally to a method for the prophylaxis and treatment of infection by microorganisms in biological environments from where the microorganisms acquire iron, heme or porphyrin, generally but not exclusively for growth. Particular biological environments contemplated by the present invention include but are not limited to vascular regions and cavities as well as mucosal membranes in animals including mammals, reptiles, amphibians and fish and in avian species as well as hooves of livestock animals. The method of the present invention involves interrupting, reducing or otherwise antagonizing the interaction between a microbial-derived polypeptide, such as but not limited to a polypeptide having cysteine proteinase activity, and a porphyrin-containing molecule in such as heme. The present invention further provides agents useful in the prophylaxis and treatment of microbial infection of biological environments such as vascular regions and cavities including mucosal membranes as well as hooves involving microbial acquisition of iron, heme or porphyrin. Such agents are particularly useful as components in therapeutic compositions. Particularly important microbial infections targeted by the present invention involve infections in the oral cavity, nasopharynx, oropharynx, vagina and urethra in mammals such as humans. Other important microbial infections including infections of hooves in livestock animals such as sheep, cattle and goats.